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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/988,732	11/20/2001	Yoshio Takeuchi	011505	8948

38834 7590 06/03/2005

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EXAMINER

FERRIS, DERRICK W

ART UNIT PAPER NUMBER

2663

DATE MAILED: 06/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<p align="center"><b>Office Action Summary</b></p>	<p><b>Application No.</b></p> <p>09/988,732</p>	<p><b>Applicant(s)</b></p> <p>TAKEUCHI ET AL.</p>	
	<p><b>Examiner</b></p> <p>Derrick W. Ferris</p>	<p><b>Art Unit</b></p> <p>2663</p>	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 November 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1,8 and 10-13 is/are rejected.
- 7) ☒ Claim(s) 2-7 and 9 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 November 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>2/15/2002</u> | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to because the reference characters in figure 1 do not correspond to the reference characters cited in the written description on top of page 10. In particular, please clarify which reference character denotes a base station and which reference character denotes a mobile unit. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: Adjusting the throughput in a wireless system.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. **Claims 1-13** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In particular, **claim 1**, lines 26-27 recite  $f(x)$  not equal to  $C \cdot x$  where it is unclear what 'C' refers to, i.e., the definition of 'C' is not further recited in the claim (i.e., C appears to be defined in claim 2). Thus the term C is indefinite. **Claims 2-13** are rejected for depending on a rejected base claim. **Claim 9** is also rejected using similar reasoning since the value A is not further defined by the claim.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claims 1, 8, and 10-13** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,393,012 B1 to *Pankaj* view of "Data Throughput of CDMA-HDR a High Efficiency-High Data Rate Personal Communication Wireless System" to *Jalai et al.* ("*Jalai*").

As to **claim 1**, see e.g., figure 1 of *Pankaj* which teaches a base station as e.g., base station 4x and a mobile unit as mobile unit 6x. As such, the rate requested is the DRC value such that a mobile unit "i" notifies information indicating a transmission rate  $DRC_i(n)$  receivable with downlink, information of the transmission rate  $DRC_i(n)$  itself

or information from which the transmission rate  $DRC_i(n)$  can be derived to a base station in every slot, see e.g., column 7, line 53 – column 8, line 36. The base station further computes  $R_i(n)$  relevant to all the mobile units “i” in every slot capable of transmission in accordance with an equivalent formula called average throughput, see e.g., column 15, lines 64-65. The base station computes an evaluation function  $F_i(n)$  in a slot “n” relevant to all mobile units “i” in accordance with the formula determines a mobile unit “m” showing maximum value of the evaluation function as e.g., in column 16, lines 42-44. With respect to the further limitation  $f(n)$  denotes an arbitrary function provided if  $f(x)$  is not equal to  $C \cdot X$  see e.g., column 15, lines 50-57; column 16, lines 15-25 and column 16, lines 57-65 of *Pankaj*. In particular, although the example taught for the Average\_Throughput has a constant K, other embodiments are possible that teach ways of determining K such as calculating at the beginning of each round of queue selections, using a different desirability metric, and varying K according the number of users. In addition, the weight of the queue also impacts the priority of the queue when servicing the queue.

*Pankaj* may be silent or deficient to the further limitation of the specific formula

(1). In particular, *Pankaj* teaches a similar formula at e.g., column 15, line 65.

*Jalai* teaches the further recited limitation above at e.g., top right column on page 3 with respect to Update Average Rate.

The proposed modification of the above-applied reference(s) necessary to arrive at the claimed subject matter would be to modify the Average\_Throughput equation so that is similar to the Update Average Rate equation.

As such, examiner notes that it would have been obvious to one skilled in the art prior to applicant's invention to include the above limitation. In particular, the motivation for modifying the reference or to combine the reference teachings would be in order to compute the average transmission rate in slot  $n$ . In particular, both references teach computing the average transmission rate in slot  $n$ . Second, there would be a reasonable expectation of success since both references teach a CDMA system. In addition, the *Pankaj* reference teaches that other embodiments are also possible (see above). Thus the references either in singular or in combination teach the above claim limitation(s).

As to **claim 8**, the classes set in advance are the weighted constants for each queue.

As to **claim 10**, at least path loss is a function of distance between the mobile and base station, see e.g., section 2 of *Jalali*.

As to **claim 11**, is met since the value  $K$  can be modified to represent the number of users which is a function to a communication load, see e.g., column 16, lines 41-56.

As to **claim 12**, see e.g., figure 1 of *Pankaj* where there is more than one base station.

As to **claim 13**, the desirable metric is used to compute  $R_i(n)$  as the Rate divided by  $F_i(n)$  as the Average\_Throughput where  $F_i(n)$  shows a maximum value and transmits a packet to the mobile unit "m" at a transmission rate  $DRC_m(n)$  at which the mobile unit is receivable.

Art Unit: 2663

***Allowable Subject Matter***

7. **Claims 2- 7, 9** would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

***Conclusion***

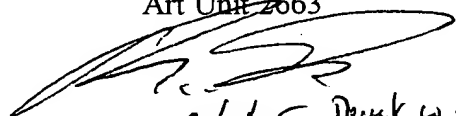
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Derrick W. Ferris whose telephone number is (571) 272-3123. The examiner can normally be reached on M-F 9 A.M. - 4:30 P.M. E.S.T.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (571)272-3139. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
DWF

Derrick W. Ferris  
Examiner  
Art Unit 2663

  
c/1/05 Derrick W. Ferris